REMARKS

Claims 45-53 are pending with claims 45-49 currently under examination. The Office has objected to the specification and rejected claims 45-49 under 35 U.S.C. § 112, first and second paragraphs. Applicants address this objection and rejections below.

Objection to the Specification

The Office contends that the instant application does not comply with the requirements of 37 C.F.R. §§ 1.821 - 1.825, noting that sequences appearing in Figures 4, 6, and 7 must be identified by a sequence identifier. (Office Action, p. 2.) In a telephone conference on October 3, 2007, with the undersigned, Examiner Parkin confirmed that Figures 4, 6, and 7 do contain a SEQ ID NO. identifier for each of the sequences present in those figures and indicated that those figures comply with 37 C.F.R. §§ 1.821 - 1.825. Because this objection to Figures 4, 6, and 7 is now moot, Applicants request that the Office withdraw this objection.

Rejections Under 35 U.S.C. § 112

The Office rejects claims 45-49 under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. (Office Action, p. 3.) According to the Office, the claims reference an antigen comprising a peptide encoded by SEQ ID NO. 35. (*Id.*) Citing page 24 of the specification, the Office contends that SEQ ID NO. 35 is a sequencing primer and does not appear to encode the antigen of interest. (*Id.*) Secondly, the Office alleges that SEQ ID NO. 35 is only 20 nucleotides in length whereas the parent antigen appears to be 10-33 amino acids long, which requires a polynucleotide sequence between 30 and 99 nucleotides. (*Id.*) Applicants respectfully traverse.

Any nucleotide sequence, as long at it is at least 18 base pairs long, can encode a six amino acid sequence, which can be an antigen, regardless of whether that nucleotide sequence is used as a PCR primer or a hybridization probe. In the case of SEQ ID NO. 35, as demonstrated below, this sequence can encode the following amino acid sequence.

SEQ ID NO. 35: A GCA GCA GGA AGC ACT ATG G

amino acid: - A A G S T M -

Claim 46, for example, recites this amino acid sequence. As the specification instructs at paragraph [044],

> the present invention also relates, therefore, to antigens, i.e. proteins, oligopeptides, or polypeptides, which can be prepared with the aid of the information disclosed in . . . Table 3 . . . . The antigens or peptides can possess relatively short constituent sequences of an amino acid sequence which is reproduced in Table 3 . . . . This amino acid sequence is at least 6 . . . amino acids in length.

As shown in Table 3 of the specification, this 6 amino acid sequence is present in gp41 of the MVP-5180/91 virus. Thus, the claimed nucleotide sequence encodes an antigen of interest.

The Office's second concern reflects a misunderstanding of claim 45. Specifically, the Office alleges that SEQ ID NO. 35 is only 20 nucleotides in length whereas the parent antigen appears to be 10-33 amino acids long, which requires a polynucleotide sequence between 30 and 99 nucleotides. (Office Action, p. 3.) Claim 45 has three components: an antigen, a peptide, and an amino acid sequence. The peptide is from 10-33 amino acids in length, is present in the ENV protein of MVP-5180/91, and forms at least part of the antigen. The amino acid sequence is encoded

by SEQ ID NO. 35 and is present in that peptide. Thus, claim 45 does not require that SEQ ID NO. 35 encode a 10-33 amino acid sequence. Instead, it only requires that the peptide comprises (i.e., contains within it) the sequence encoded by SEQ ID NO. 35. Applicants therefore request that the Office withdraw this rejection of claims 45-49.

The Office also rejects claims 45-49 under 35 U.S.C. § 112, first paragraph, as allegedly not enabled. (Office Action, p. 3.) The Office again suggests that SEQ ID NO. 35 is a sequencing primer and does not appear to encode the antigen of interest. (*Id.* at p. 4.) The Office also reiterates that SEQ ID NO. 35 is only 20 nucleotides in length whereas the parent antigen appears to be 10-33 amino acids long, which requires a polynucleotide sequence between 30 and 99 nucleotides. (*Id.*) The invention of claims 45-49 is fully enabled for the reasons provided above and the additional reason set forth below.

It is well within ordinary skill in the art to take a nucleotide sequence encoding the peptide described in claim 45, insert that nucleotide sequence into an expression vector, transfect or transform a host cell with that expression vector, express the peptide, and isolate it. Such fundamental techniques in molecular biology were known in the art at the time the instant application was filed. See, e.g., the specification at paragraph [035] and [044]. The skilled artisan could, for example, prepare the DNA from the genomic DNA of the MVP-5180/91 virus by PCR amplification using the nucleotide sequence in Table 3. The specification teaches such techniques at paragraphs [059]-[063]. Also, the skilled artisan can determine the nucleotide sequence and amino acid sequence of the entire MVP-5180/91 envelope protein using the information in SEQ ID NO. 56 and Table 5. Alternatively, the skilled artisan could

simply synthesize the nucleic acid sequence and clone it as described or directly synthesize the peptide itself, bypassing the need for using an expression vector. All of these techniques were well known at the time the application was filed.

In sum, one of ordinary skill in the art can make the antigens recited in claims 45-49 using the information provided in the specification and fundamental molecular biology techniques that were well known at the time the application was filed. Thus, claims 45-49 are enabled. Applicants request that the Office withdraw this rejection of claims 45-49.

Conclusion

In view of the foregoing remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of claims 45-49.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: October 10, 2007

By: 

Maryann T. Puglielli
Reg. No. 52,138